

大同大學100 學年度(寒)轉學入學考試試題

考試科目：電路學

所別：電機工程學系

第 全 頁

註：本次考試 不可以參考自己的書籍及筆記； 不可以使用字典； 不可以使用計算器。

(1) In the circuit shown in Fig.1.

Determine (a) V_x and (b) the **power absorbed** by the **12- Ω** resistor.

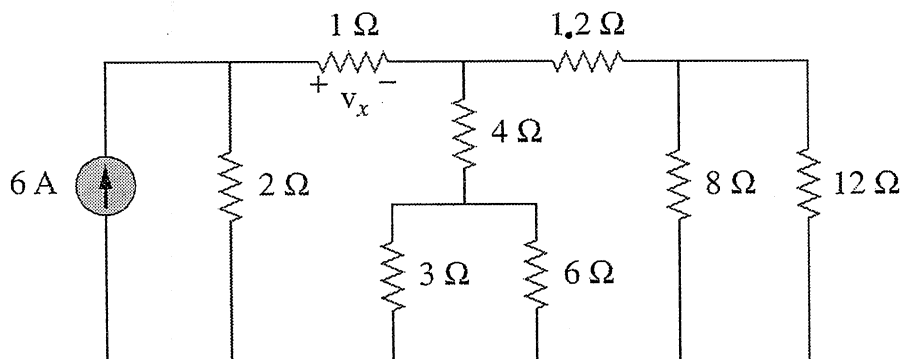


Fig.1

(2) Using **mesh analysis**, find v_0 in the circuit in Fig. 2.

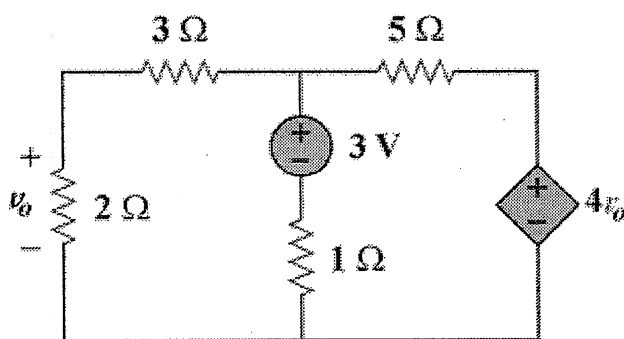


Fig.2

(3) Find the **Thevenin equivalent** looking into terminals **a-b** of the circuit in Fig. 3 and solve for i_x .

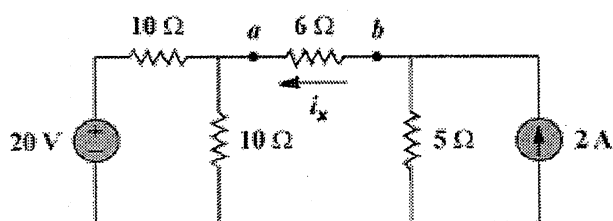


Fig. 3.

(4) Three capacitors, $C_1 = 5 \mu\text{F}$, $C_2 = 10 \mu\text{F}$, and $C_3 = 20 \mu\text{F}$, are connected in **parallel** across a 150-V source. Determine:

- (a) the **total capacitance**,
- (b) the **charge** on each capacitor,
- (c) the **total energy** stored in the parallel combination.